

	ATGAAATTTA GTAAAAATA TATAGCAGCT GGATCAGCTG TTATCGTATC CTTGAGTCTA	60
	TGTGCCTATG CACTAAACCA GCATCGTTTCG CAGGAAAATA AGGACAATAA TCGTGTCTCT	120
	TATGTGGATG GCAGCCAGTC AAGTCAGAAA AGTGAAGAACT TGACACCAGA CCAGGTTAGC	180
	CAGAAAGAAG GAATTCAGGC TGAGCAAATT GTAATCAAAA TTACAGATCA GGGCTATGTA	240
5	ACGTCACACG GTGACCACTA TCATTACTAT AATGGGAAAG TTCCTTATGA TGCCCTCTTT	300
	AGTGAAGAAC TCTTGATGAA GGATCCAAAC TATCAACTTA AAGACGCTGA TATTGTCAAT	360
	GAAGTCAAGG GTGGTTATAT CATCAAGGTC GATGGAAAAT ATTATGTCTA CCTGAAAGAT	420
	GCAGCTCATG CTGATAATGT TCGAACTAAA GATGAAATCA ATCGTCAAAA ACAAGAACAT	480
	GTCAAAGATA ATGAGAAGGT TAACTCTAAT GTTGCTGTAG CAAGGTCTCA GGGACGATAT	540
10	ACGACAAATG ATGGTTATGT CTTTAATCCA GCTGATATTA TCGAAGATAC GGGTAATGCT	600
	TATATCGTTC CTCATGGAGG TCACTATCAC TACATTCCCA AAAGCGATTT ATCTGCTAGT	660
	GAATTAGCAG CAGCTAAAGC ACATCTGGCT GGAAAAATA TGCAACCGAG TCAGTTAAGC	720
	TATTCTTCAA CAGCTAGTGA CAATAACACG CAATCTGTAG CAAAAGGATC AACTAGCAAG	780
	CCAGCAAATA AATCTGAAAA TCTCCAGAGT CTTTGAAGG AACTCTATGA TTCACCTAGC	840
15	GCCCAACGTT ACAGTGAATC AGATGGCCTG GTCTTTGACC CTGCTAAGAT TATCAGTCGT	900
	ACACCAAATG GAGTTGCGAT TCCGCATGGC GACCATTACC ACTTTATTCC TTACAGCAAG	960
	CTTCTGCTT TAGAAGAAAA GATTGCCAGA ATGGTGCCTA TCAGTGGAAC TGGTCTACA	1020
	GTTTCTACAA ATGCAAAACC TAATGAAGTA GTGTCTAGTC TAGGCAGTCT TTCAAGCAAT	1080
	CCTTCTTCTT TAACGACAAG TAAGGAGCTC TCTTCAGCAT CTGATGGTTA TATTTTAAAT	1140
20	CCAAAAGATA TCGTTGAAGA AACGGCTACA GCTTATATTG TAAGACATGG TGATCATTTC	1200
	CATTACATTC CAAAATCAAA TCAAATTGGG CAACCGACTC TTCCAAACAA TAGTCTAGCA	1260
	ACACCTTCTC CATCTCTTCC AATCAATCCA GGAACCTCAC ATGAGAAACA TGAAGAAGAT	1320
	GGATACGGAT TTGATGCTAA TCGTATTATC GCTGAAGATG AATCAGGTTT TGTATGAGT	1380
	CACGGAGACC ACAATCATT AATCTTCAAG AAGGACTTGA CAGAAGAGCA AATTAAGGCT	1440
25	GCGCAAAAAC ATTTAGAGGA AGTTAAACT AGTCATAATG GATTAGATT TTTGTCATCT	1500
	CATGAACAGG ATTATCCAGG TAATGCCAAA GAAATGAAAG ATTTAGATAA AAAAATCGAA	1560
	GAAAAAATTG CTGGCATTAT GAAACAATAT GGTGTCAAAC GTGAAAGTAT TGTCGTGAAT	1620
	AAAGAAAAAA ATGCGATTAT TTATCCGCAT GGAGATCACC ATCATGCAGA TCCGATTGAT	1680
	GAACATAAAC CGGTTGGAAT TGGTCATTCT CACAGTAACT ATGAACTGTT TAAACCCGAA	1740
30	GAAGGAGTTG CTAAAAAGA AGGGAATAAA GTTTATACTG GAGAAGAATT AACGAATGTT	1800
	GTTAATTTGT TAAAAAATAG TACGTTTAAT AATCAAAACT TTACTCTAGC CAATGGTCAA	1860
	AAACGCGTTT CTTTGTAGTTT TCCGCCTGAA TTGGAGAAAA AATTAGGTAT CAATATGCTA	1920
	GTAAATTTAA TAACACCAGA TGGAAAAGTA TTGGAGAAAG TATCTGGTAA AGTATTTGGA	1980
	GAAGGAGTAG GGAATATTGC AAACCTTGAA TTAGATCAAC CTTATTTACC AGGACAAACA	2040
35	TTTAAGTATA CTATCGCTTC AAAAGATTAT CCAGAAGTAA GTTATGATGG TACATTTACA	2100
	GTTCCAACCT CTTTAGCTTA CAAAATGGCC AGTCAAACGA TTTTCTATCC TTTCCATGCA	2160
	GGGGATACTT ATTTAAGAGT GAACCCCTCA TTTGCAGTGC CTAAAGGAAC TGATGCTTTA	2220
	GTCAGAGTGT TTGATGAATT TCATGGAAAT GCTTATTTAG AAAATAACTA TAAAGTTGGT	2280
	GAAATCAAAT TACCGATTCC GAAATTAAAC CAAGGAACAA CCAGAACGGC CGGAAATAAA	2340
40	ATTCTGTGTA CCTTCATGGC AAATGCTTAT TTGGACAATC AATCGACTTA TATTGTGGAA	2400
	GTACCTATCT TGGAAAAAGA AAATCAAAC GATAAACCAA GTATTCTACC ACAATTTAAA	2460
	AGGAATAAAG CACAAGAAAA CTCAAAACCT GATGAAAAGG TAGAAGAACC AAAGACTAGT	2520
	GAGAAGGTAG AAAAAGAAAA ACTTCTGAA ACTGGGAATA GTACTAGTAA TTCAACGTTA	2580
	GAAGAAGTTC CTACAGTGGA TCCTGTACAA GAAAAGTAG CAAAATTTGC TGAAAGTTAT	2640
45	GGGATGAAGC TAGAAATGT CTGTGTTAAT ATGGACGGAA CAATTGAATT ATATTTACCA	2700

TCAGGAGAAG TCATTAAAAA GAATATGGCA GATTTTACAG GAGAAGCACC TCAAGGAAAT	2760
GGTGAAAATA AACCATCTGA AAATGGAAAA GTATCTACTG GAACAGTTGA GAACCAACCA	2820
ACAGAAAATA AACCAAGCAGA TTCTTTACCA GAGGCACCAA ACGAAAAACC TGTAACCA	2880
GAAAACTCAA CGGATAATGG AATGTTGAAT CCAGAAGGGA ATGTGGGGAG TGACCCTATG	2940
5 TTAGATCCAG CATTAGAGGA AGCTCCAGCA GTAGATCCTG TACAAGAAAA ATTAGAAAAA	3000
TTTACAGCTA GTTACGGATT AGGCTTAGAT AGTGTATAT TCAATATGGA TGGAACGATT	3060
GAATTAAGAT TGCCAAGTGG AGAAGTGATA AAAAAGAATT TATCTGATTT CATAGCGTAA	3120

(SEQ ID NO: 1)

FIGURE 1

10

AATTCCTTGT CGGGTAAGTT CCGACCCGCA CGAAAGGCGT AATGATTTGG GCACGTGCTC	60
AACGAGAGAC TCGGTGAAAT TTTAGTACCT GTGAAGATGC AGGTTACCCG CGACAGGACG	120
GAAAGACCCC ATGGAGCTTT ACTGCAGTTT GATATTGAGT GTCTGTACCA CATGTACAGG	180
15 ATAGGTAGGA GTCTAAGAGA TCGGGACGCC AGTTTCGAAG GAGACGCTGT TGGGATACTA	240
CCCTTGTGTT ATGGCCACTC TAACCCAGAT AGGTGATCCC TATCGGAGAC AGTGTCTGAC	300
GGGCAGTTTG ACTGGGGCGG TCGCCTCCTA AAAGGTAACG GAGGCGCCCA AAGGTTCCCT	360
CAGAATGGTT GGAATCATT CGCAGAGTGT AAAGGTATAA GGGAGCTTGA CTGCGAGAGC	420
TACAACTCGA GCAGGGACGA AAGTCGGGCT TAGTGATCCG GTGGTTCCGT ATGGAAGGGC	480
20 CATCGCTCAA CGGATAAAAG CTACCCTGGG GATAACAGGC TTATCTCCCC CAAGAGTTCA	540
CATCGACGGG GAGGTTTGGC ACCTCGATGT CGGCTCGTCG CATCCTGGGG CTGTAGTCGG	600
TCCCAAGGGT TGGGCTGTTT GCCCATTAAA CCGGCACGCG AGCTGGGTTT AGAACGTCGT	660
GAGACAGTTC GGTCCCTATC CGTCGCGGGC GTAGGAAATT TGAGAGGATC TGCTCCTAGT	720
ACGAGAGGAC CAGAGTGGAC TTACCCTGGG TGTACCAGTT GTCTTGCCAA AGGCATCGCT	780
25 GGGTAGCTAT GTAGGGAAGG GATAAACGCT GAAAGCATCT AAGTGTGAAA CCCACCTCAA	840
GATGAGATTT CCCATGATTA TATATCAGTA AGAGCCCTGA GAGATGATCA GGTAGATAGG	900
TTAGAAGTGG AAGTGTGGCG ACACATGTAG CGGACTAATA CTAATAGCTC GAGGACTTAT	960
CCAAAGTAAC TGAGAATATG AAAGCGAACG GTTTTCTTAA ATTGAATAGA TATTCAATTT	1020
TGAGTAGGTA TTAATCAGAG TTAAGTGACG ATAGCCTAGG AGATACACCT GTACCCATGC	1080
30 CGAACACAGA AGTTAAGCCC TAGAACGCCG GAAGTAGTTG GGGGTTGCCC CCTGTGAGAT	1140
AGGGAAGTCG CTTAGCTCTA GGGAGTTTAG CTCAGCTGGG AGAGCATCTG CCTTACAAGC	1200
AGAGGGTCAG CGGTTGCATC CCGTTAACTC CCAAAGGTCC CGTAGTGTAG CGGTTATCAC	1260
GTCGCCCTGT CACGGCGAAG ATCGCGGGTT CGATTCCCGT CGGGACCGTT TAAGGTAACG	1320
CAAGTTATTT TAGACTCGTT AGCTCAGTTG GTAGAGCAAT TGACTTTTAA TCAATGGGTC	1380
35 ACTGGTTCGA GCCCAGTACG GGTCATATAT GCGGGTTTGG CGGAATTCTA ATCTCTTTGA	1440
AATCATCTTC TCTCACTTTC CAAAACCTCTA TTACCTCTTA TTATACCACA TTTCAATCTT	1500
CAACTTCCCA GTAATATAAG CACCTCTGGC GAAAGAAGTT TCAATGTCCT AAAGTAATAA	1560
GTGAATCCAA TTCAGGAACT CCAAGAACAA AAGAAACATC TGGTGTGACA AGTATTGGAT	1620
GGCACAGAGT CACGTGGTAG TCTGACCTTA GCAGAAATTT TAAATAGTAA ACTATTTACT	1680
40 GGTTAATTAA ATGGTTAAAT AACCGGTTTA GAAACTATT TAATAAAGTA AAAGAAGTTG	1740
AGAAAAAAT TCATCATTTA TTGAAATGAG GGATTTATGA AATTTAGTAA AAAATATATA	1800
GCAGCTGGAT CAGCTGTTAT CGTATCCTTG AGTCTATGTG CCTATGCACT AAACCAGCAT	1860
CGTTCGAGG AAAATAAGGA CAATAATCGT GTCTCTTATG TGGATGGCAG CCAGTCAAGT	1920
CAGAAAAGTG AAAACTTGAC ACCAGACCAG GTTAGCCAGA AAGAAGGAAT TCAGGCTGAG	1980
45 CAAATTGTAA TCAAAATTAC AGATCAGGGC TATGTAACGT CACACGGTGA CCACTATCAT	2040

	TACTATAATG GGAAAGTTCC TTATGATGCC CTCTTTAGTG AAGAACTCTT GATGAAGGAT	2100
	CCAAACTATC AACTTAAAGA CGCTGATATT GTCAATGAAG TCAAGGGTGG TTATATCATC	2160
	AAGGTCGATG GAAAATATTA TGTCTACCTG AAAGATGCAG CTCATGCTGA TAATGTTCTGA	2220
	ACTAAAGATG AAATCAATCG TCAAAAACAA GAACATGTCA AAGATAATGA GAAGGTAAAC	2280
5	TCTAATGTTG CTGTAGCAAG GTCTCAGGGA CGATATACGA CAAATGATGG TTATGTCTTT	2340
	AATCCAGCTG ATATTATCGA AGATACGGGT AATGCTTATA TCGTTCCTCA TGGAGGTCAC	2400
	TATCACTACA TTCCCAAAAG CGATTTATCT GCTAGTGAAT TAGCAGCAGC TAAAGCACAT	2460
	CTGGCTGGAA AAAATATGCA ACCGAGTCAG TTAAGCTATT CTTCAACAGC TAGTGACAAT	2520
	AACACGCAAT CTGTAGCAAA AGGATCAACT AGCAAGCCAG CAAATAAATC TGAAAATCTC	2580
10	CAGAGTCTTT TGAAGGAACT CTATGATTCA CCTAGCGCCC AACGTTACAG TGAATCAGAT	2640
	GGCCTGGTCT TTGACCCTGC TAAGATTATC AGTCGTACAC CAAATGGAGT TGGGATTCCG	2700
	CATGGCGACC ATTACCACTT TATTCCTTAC AGCAAGCTTT CTGCTTTAGA AGAAAAGATT	2760
	GCCAGAATGG TGCCTATCAG TGGAACTGGT TCTACAGTTT CTACAAATGC AAAACCTAAT	2820
	GAAGTAGTGT CTAGTCTAGG CAGTCTTTCA AGCAATCCTT CTTCTTTAAC GACAAGTAAG	2880
15	GAGCTCTCTT CAGCATCTGA TGGTTATATT TTTAATCCAA AAGATATCGT TGAAGAAACG	2940
	GCTACAGCTT ATATTGTAAG ACATGGTGAT CATTTCCTT ACATTCCAAA ATCAAATCAA	3000
	ATTGGGCAAC CGACTCTTCC AAACAATAGT CTAGCAACAC CTTCTCCATC TCTTCCAATC	3060
	AATCCAGGAA CTTACATGA GAAACATGAA GAAGATGGAT ACGGATTTGA TGCTAATCGT	3120
	ATTATCGCTG AAGATGAATC AGGTTTGTG ATGAGTCACG GAGACCACAA TCATTATTTT	3180
20	TTCAAGAAGG ACTTGACAGA AGAGCAAATT AAGGCTGCGC AAAAACATTT AGAGGAAGTT	3240
	AAAAC TAGTC ATAATGGATT AGATTCTTTG TCATCTCATG AACAGGATTA TCCAGGTAAT	3300
	GCCAAAGAAA TGAAAGATTT AGATAAAAA ATCGAAGAAA AAATTGCTGG CATTATGAAA	3360
	CAATATGGTG TCAAACGTGA AAGTATTGTC GTGAATAAAG AAAAAAATGC GATTATTTAT	3420
	CCGCATGGAG ATCACCATCA TGCAGATCCG ATTGATGAAC ATAAACCGGT TGGAAATGGT	3480
25	CATTCTCACA GTAACATGA ACTGTTTAAA CCCGAAGAAG GAGTTGCTAA AAAAGAAGGG	3540
	AATAAAGTTT ATACTGGAGA AGAATTAACG AATGTTGTTA ATTTGTTAAA AAATAGTACG	3600
	TTTAATAATC AAAACTTTAC TCTAGCCAAT GGTCAAAAAC GCGTTTCTTT TAGTTTCCG	3660
	CCTGAATTGG AGAAAAAATT AGGTATCAAT ATGCTAGTAA AATTAATAAC ACCAGATGGA	3720
	AAAGTATTGG AGAAAGTATC TGGTAAAGTA TTTGGAGAAG GAGTAGGGAA TATTGCAAC	3780
30	TTTGAATTAG ATCAACCTTA TTTACCAGGA CAAACATTTA AGTATACTAT CGCTTCAAAA	3840
	GATTATCCAG AAGTAAGTTA TGATGGTACA TTTACAGTTC CAACCTCTTT AGCTTACAAA	3900
	ATGGCCAGTC AAACGATTTT CTATCCTTTC CATGCAGGGG ATACTTATTT AAGAGTGAAC	3960
	CCTCAATTTG CAGTGCCTAA AGGAAC TGAT GCTTTAGTCA GAGTGTGTTGA TGAATTCAT	4020
	GGAAATGCTT ATTTAGAAAA TAACTATAAA GTTGGTGAAA TCAAATTACC GATTCCGAAA	4080
35	TTAAACCAAG GAACAACCAG AACGGCCGGA AATAAAATTC CTGTAACCTT CATGGCAAAT	4140
	GCTTATTTGG ACAATCAATC GACTTATATT GTGGAAGTAC CTATCTTGGA AAAAGAAAAT	4200
	CAAAC TGATA AACCAACTAT TCTACCACAA TTTAAAAGGA ATAAAGCACA AGAAAACTCA	4260
	AAACTTGATG AAAAGGTAGA AGAACCAAAG ACTAGTGAGA AGGTAGAAAA AGAAAACTT	4320
	TCTGAAACTG GGAATAGTAC TAGTAATTCA ACGTTAGAAG AAGTTCCTAC AGTGGATCCT	4380
40	GTACAAGAAA AAGTAGCAAA ATTTGCTGAA AGTTATGGGA TGAAGCTAGA AAATGTCTTG	4440
	TTTAATATGG ACGGAACAAT TGAATTATAT TTACCATCAG GAGAAGTCAT TAAAAAGAAT	4500
	ATGGCAGATT TTACAGGAGA AGCACCTCAA GGAAATGGTG AAAATAAACC ATCTGAAAAT	4560
	GGAAAAGTAT CTACTGGAAC AGTTGAGAAC CAACCAACAG AAAATAAACC AGCAGATTCT	4620
	TTACCAGAGG CACCAAACGA AAAACCTGTA AAACCAGAAA ACTCAACGGA TAATGGAATG	4680
45	TTGAATCCAG AAGGGAATGT GGGGAGTGAC CCTATGTTAG ATCCAGCATT AGAGGAAGCT	4740

CCAGCAGTAG ATCCTGTACA AGAAAAATTA GAAAAATTTA CAGCTAGTTA CGGATTAGGC 4800
 TTAGATAGTG TTATATTCAA TATGGATGGA ACGATTGAAT TAAGATTGCC AAGTGGAGAA 4860
 GTGATAAAAA AGAATTTATC TGATTTTATA GCGTAAGGAA TAGCAGTAGA AAAAGTCTGA 4920
 ATCAAAAATG AAGTTCTCTC AAAAGTTAGA AATAAACTC TGACTTTGGG AGAATTTTAT 4980
 5 TTTATTATTA ATATATAAAA TTTCTTGACA TACAACCTAA AAAGAGGTGG AATATTTACT 5040
 AGTTAATT (SEQ ID NO : 2) 5048

FIGURE 2

10 ATGAAAATCA ATAAAAATA TCTAGCTGGG TCAGTAGCTA CACTTGTTTT AAGTGTCTGT 60
 GCTTATGAAC TAGGTTTGCA TCAAGCTCAA ACTGTAAAAG AAAATAATCG TGTTCCTAT 120
 ATAGATGGAA AACAAGCGAC GCAAAAAACG GAGAATTTGA CTCCTGATGA GGTTAGCAAG 180
 CGTGAAGGAA TCAACGCCGA ACAAATCGTC ATCAAGATTA CGGATCAAGG TTATGTGACC 240
 TCTCATGGAG ACCATTATCA TTACTATAAT GGCAAGGTCC CTTATGATGC CATCATCAGT 300
 15 GAAGAGCTCC TCATGAAAGA TCCGAATTAT CAGTTGAAGG ATTCAGACAT TGTCAATGAA 360
 ATCAAGGGTG GTTATGTCAT TAAGGTAAAC GGTAAATACT ATGTTTACCT TAAGGATGCA 420
 GCTCATGCCG ATAATGTCG TACAAAAGAA GAAATCAATC GGCAAAAACA AGAACATAGT 480
 CAGCATCGTG AAGGAGGGAC TTCAGCAAAC GATGGTGCGG TAGCCTTTGC ACGTTCACAG 540
 GGACGCTACA CCACAGATGA TGGTTATATC TTCAATGCAT CTGATATCAT CGAAGATACG 600
 20 GGCGATGCCCT ATATCGTTCC TCATGGAGAT CATTACCATT ACATTCCTAA GAATGAGTTA 660
 TCAGCTAGCG AGTTGGCTGC TGCAGAAGCC TTCCTATCTG GTCGGGAAAA TCTGTCAAAT 720
 TTAAGAACCT ATCGCCGACA AAATAGCGAT AACACTCAA GAACAACTG GGTACCTTCT 780
 GTAAGCAATC CAGGAACCTAC AAATACTAAC ACAAGCAACA ACAGCAACAC TAACAGTCAA 840
 GCAAGTCAAA GTAATGACAT TGATAGTCTC TTGAAACAGC TCTACAACT GCCTTTGAGT 900
 25 CAACGCCATG TAGAATCTGA TGGCCTTATT TTCGACCCAG CGCAAAATCAC AAGTCGAACC 960
 GCCAGAGGTG TAGCTGTCCC TCATGGTAAC CATTACCCTT TTATCCCTTA TGAACAAATG 1020
 TCTGAATTGG AAAAACGAAT TGCTCGTATT ATCCCTTC GTTATCGTTC AAACCATTGG 1080
 GTACCAGATT CAAGACCAGA AGAACCAAGT CCACAACCGA CTCCAGAACC TAGTCCAAGT 1140
 CCGCAACCTG CACCAATCC TCAACCAGCT CCAAGCAATC CAATTGATGA GAAATTGGTC 1200
 30 AAAGAAGCTG TTCGAAAAGT AGGCGATGGT TATGTCTTTG AGGAGAATGG AGTTTCTCGT 1260
 TATATCCCAG CCAAGAATCT TTCAGCAGAA ACAGCAGCAG GCATTGATAG CAACTGGCC 1320
 AAGCAGGAAA GTTTATCTCA TAAGCTAGGA GCTAAGAAAA CTGACCTCCC ATCTAGTGAT 1380
 CGAGAATTTT ACAATAAGGC TTATGACTTA CTAGCAAGAA TTCACCAAGA TTTACTTGAT 1440
 AATAAAGGTC GACAAGTTGA TTTTGAGGCT TTGGATAACC TGTGGAACG ACTCAAGGAT 1500
 35 GTCTCAAGTG ATAAAGTCAA GTTAGTGGAT GATATTCTTG CCTTCTTAGC TCCGATTCTG 1560
 CATCCAGAAC GTTTAGGAAA ACCAAATGCG CAAATTACCT AACTGATGA TGAGATTCAA 1620
 GTAGCCAAGT TGGCAGGCAA GTACACAACA GAAGACGGTT ATATCTTTGA TCCTCGTGAT 1680
 ATAACCAGTG ATGAGGGGGA TGCCTATGTA ACTCCACATA TGACCCATAG CCACTGGATT 1740
 AAAAAAGATA GTTTGTCTGA AGCTGAGAGA GCGGCAGCCC AGGCTTATGC TAAAGAGAAA 1800
 40 GGTGTTGACCC CTCCTTCGAC AGACCATCAG GATTCAGGAA ATACTGAGGC AAAAGGAGCA 1860
 GAAGCTATCT ACAACCGCGT GAAAGCAGCT AAGAAGGTGC CACTTGATCG TATGCCTTAC 1920
 AATCTTCAAT ATACTGTAGA AGTCAAAAAC GGTAGTTTAA TCATACCTCA TTATGACCAT 1980
 TACCATAACA TCAAATTTGA GTGGTTTGAC GAAGGCCTTT ATGAGGCACC TAAGGGGTAT 2040
 ACTCTTGAGG ATCTTTTGGC GACTGTCAAG TACTATGTCT AACATCCAAA CGAACGTCCG 2100
 45 CATTCAGATA ATGGTTTGG TAACGCTAGC GACCATGTTC AAAGAAACAA AAATGGTCAA 2160

GCTGATACCA ATCAAACGGA AAAACCAAGC GAGGAGAAAC CTCAGACAGA AAAACCTGAG 2220
 GAAGAAACCC CTCGAGAAGA GAAACCACAA AGCGAGAAAC CAGAGTCTCC AAAACCAACA 2280
 GAGGAACCAG AAGAAGAATC ACCAGAGGAA TCAGAAGAAC CTCAGGTCTGA GACTGAAAAG 2340
 GTTGAAGAAA AACTGAGAGA GGCTGAAGAT TTAAGTGGAA AAATCCAGGA TCCAATTATC 2400
 5 AAGTCCAATG CCAAAGAGAC TCTCACAGGA TTAATAATA ATTTACTATT TGGCACCCAG 2460
 GACAACAATA CTATTATGGC AGAAGCTGAA AAATATTGG CTTTATTAAA GGAGAGTAAG 2520
 TAA (SEQ ID NO: 3) 2523
 FIGURE 3

10 CAGAGATCTT AGTGAATCAA ATATACTTAA GAAAAGAGGA AAGAATGAAA ATCAATAAAA 60
 AATATCTAGC TGGGTCAGTA GCTACACTTG TTTTAAGTGT CTGTGCTTAT GAACTAGGTT 120
 TGCATCAAGC TCAAACGTGA AAAGAAAATA ATCGTGTTC CTATATAGAT GGAAAACAAG 180
 CGACGCAAAA AACGGAGAAT TTGACTCCTG ATGAGGTTAG CAAGCGTGAA GGAATCAACG 240
 15 CCGAACAAAT CGTCATCAAG ATTACGGATC AAGGTTATGT GACCTCTCAT GGAGACCATT 300
 ATCATTACTA TAATGGCAAG GTCCCTTATG ATGCCATCAT CAGTGAAGAG CTCCTCATGA 360
 AAGATCCGAA TTATCAGTTG AAGGATTCAG ACATTGTCAA TGAAATCAAG GGTGGTTATG 420
 TCATTAAGGT AAACGGTAAA TACTATGTTT ACCTTAAGGA TGCAGCTCAT GCGGATAATG 480
 TCCGTACAAA AGAAGAAATC AATCGGCAAA AACAAGAACA TAGTCAGCAT CGTGAAGGAG 540
 20 GGACTTCAGC AAACGATGGT GCGGTAGCCT TTGCACGTTT ACAGGGACGC TACACCACAG 600
 ATGATGGTTA TATCTTCAAT GCATCTGATA TCATCGAAGA TACGGGCGAT GCCTATATCG 660
 TTCCTCATGG AGATCATTAC CATTACATTC CTAAGAATGA GTTATCAGCT AGCGAGTTGG 720
 CTGCTGCAGA AGCCTTCCTA TCTGGTCGGG AAAATCTGTC AAATTTAAGA ACCTATCGCC 780
 GACAAAATAG CGATAACACT CCAAGAACAA ACTGGGTACC TTCTGTAAGC AATCCAGGAA 840
 25 CTACAAATAC TAACACAAGC AACAACAGCA AACTAACAG TCAAGCAAGT CAAAGTAATG 900
 ACATTGATAG TCTCTTGAAA CAGCTCTACA AACTGCCTTT GAGTCAACGC CATGTAGAAT 960
 CTGATGGCCT TATTTTCGAC CCAGCGCAAA TCACAAGTCG AACCGCCAGA GGTGTAGCTG 1020
 TCCCTCATGG TAACCATTAC CACTTTATCC CTTATGAACA AATGTCTGAA TTGGAAAAAC 1080
 GAATTGCTCG TATTATTCCC CTTCGTTATC GTTCAAACCA TTGGGTACCA GATTCAAGAC 1140
 30 CAGAAGAACC AAGTCCACAA CCGACTCCAG AACCTAGTCC AAGTCCGCAA CCTGCACCAA 1200
 ATCCTCAACC AGCTCCAAGC AATCCAATTG ATGAGAAATT GGTCAAAGAA GCTGTTGCAA 1260
 AAGTAGGCGA TGGTTATGTC TTTGAGGAGA ATGGAGTTTC TCGTTATATC CCAGCCAAGA 1320
 ATCTTTCAGC AGAAACAGCA GCAGGCATTG ATAGCAAACCT GGCCAAGCAG GAAAGTTTAT 1380
 CTCATAAGCT AGGAGCTAAG AAAACTGACC TCCCATCTAG TGATCGAGAA TTTTACAATA 1440
 35 AGGCTTATGA CTTACTAGCA AGAATTCACC AAGATTTACT TGATAATAAA GGTGACAAG 1500
 TTGATTTTGA GGCTTTGGAT AACCTGTTGG AACGACTCAA GGATGTCTCA ACTGATAAAG 1560
 TCAAGTTAGT GGATGATATT CTTGCCTTCT TAGCTCCGAT TCGTCATCCA GAACGTTTAG 1620
 GAAAACCAAA TGCACAAATT ACCTACACTG ATGATGAGAT TCAAGTAGCC AAGTTGGCAG 1680
 GCAAGTACAC AACAGAAGAC GGTATATCTT TTGATCCCTG TGATATAACC AGTGATGAGG 1740
 40 GGGATGCCTA TGTAACCTCA CATATGACCC ATAGCCACTG GATTAAAAAA GATAGTTTGT 1800
 CTGAAGCTGA GAGAGCGGCA GCCCAGGCTT ATGCTAAAGA GAAAGGTTTG ACCCCTCCTT 1860
 CGACAGACCA TCAGGATTCA GGAAATACTG AGGCAAAAAG AGCAGAAGCT ATCTACAACC 1920
 GCGTGAAAGC AGCTAAGAAG GTGCCACTTG ATCGTATGCC TTACAATCTT CAATATACTG 1980
 TAGAAGTCAA AAACGGTAGT TTAATCATAC CTCATTATGA CCATTACCAT AACATCAAAT 2040
 45 TTGAGTGGTT TGACGAAGGC CTTTATGAGG CACCTAAGGG GTATACTCTT GAGGATCTTT 2100

	TGGCGACTGT CAAGTACTAT GTCGAACATC CAAACGAACG TCCGCATTCA GATAATGGTT	2160
	TTGGTAACGC TAGCGACCAT GTTCAAAGAA ACAAAAATGG TCAAGCTGAT ACCAATCAAA	2220
	CGGAAAAACC AAGCGAGGAG AAACCTCAGA CAGAAAAACC TGAGGAAGAA ACCCCTCGAG	2280
	AAGAGAAACC ACAAAGCGAG AAACCAGAGT CTCCAAAACC AACAGAGGAA CCAGAAGAAG	2340
5	AATCACCAGA GGAATCAGAA GAACCTCAGG TCGAGACTGA AAAGGTTGAA GAAAAACTGA	2400
	GAGAGGCTGA AGATTACTT GGAAAAATCC AGGATCCAAT TATCAAGTCC AATGCCAAAG	2460
	AGACTCTCAC AGGATTAAAA AATAATTTAC TATTTGGCAC CCAGGACAAC AATACTATTA	2520
	TGGCAGAAGC TGAAAAACTA TTGGCTTTAT TAAAGGAGAG TAAGTAAAGG TAGCAGCATT	2580
	TTCTAACTCC TAAAAACAGG ATAGGAGAAC GGGAAAACGA AAAATGAGAG CAGAATGTGA	2640
10	GTTCTAG (SED ID NO : 4)	2647

FIGURE 4

	GGGTCTTAAA ACTCTGAATC CTTTAGAGGC AGACCCACAA AATGACAAGA CCTATTTAGA	60
15	AAATCTGGAA GAAAATATGA GTGTTCTAGC AGAAGAATTA AAGTGAGGAA AGAATGAAAA	120
	TCAATAAAAA ATATCTAGCA GGTTCAGTGG CAGTCCTTGC CCTAAGTGTT TGTTCTTATG	180
	AACCTTGGTCG TCACCAAGCT GGTTCAGGTTA AGAAAGAGTC TAATCGAGTT TCTTATATAG	240
	ATGGTGATCA GGCTGGTCAA AAGGCAGAAA ATTTGACACC AGATGAAGTC AGTAAGAGAG	300
	AGGGGATCAA CGCCGAACAA ATTGTTATCA AGATTACGGA TCAAGGTTAT GTGACCTCTC	360
20	ATGGAGACCA TTATCATTAC TATAATGGCA AGGTTCCCTTA TGATGCCATC ATCAGTGAAG	420
	AACTTCTCAT GAAAGATCCG AATTATCAGT TGAAGGATTC AGACATTGTC AATGAAATCA	480
	AGGGTGGCTA TGTGATTAAG GTAGACGGAA AATACTATGT TTACCTTAAA GATGCGGCCC	540
	ATGCGGACAA TATTCGGACA AAAGAAGAGA TTAAACGTCA GAAGCAGGAA CACAGTCATA	600
	ATCATAACTC AAGAGCAGAT AATGCTGTTG CTGCAGCCAG AGCCCAAGGA CGTTATACAA	660
25	CGGATGATGG GTATATCTTC AATGCATCTG ATATCATTGA GGACACGGGT GATGCTTATA	720
	TCGTTCTCTCA CGGCAGCCAT TACCATTACA TTCCTAAGAA TGAGTTATCA GCTAGCGAGT	780
	TAGCTGCTGC AGAAGCCTAT TGGAATGGGA AGCAGGGATC TCGTCCTTCT TCAAGTTCTA	840
	GTTATAATGC AAATCCAGTT CAACCAAGAT TGTCAGAGAA CCACAATCTG ACTGTCACTC	900
	CAACTTATCA TCAAAATCAA GGGGAAAACA TTTCAAGCCT TTTACGTGAA TTGTATGCTA	960
30	AACCCTTATC AGAACGCCAT GTAGAATCTG ATGGCCTTAT TTTCGACCCA GCGCAAATCA	1020
	CAAGTCGAAC CGCCAGAGGT GTAGCTGTCC CTCATGGTAA CCATTACCAC TTTATCCCTT	1080
	ATGAACAAAT GTCTGAATTG GAAAAACGAA TTGCTCGTAT TATCCCCCTT CGTTATCGTT	1140
	CAAACCATTG GGTACCAGAT TCAAGACCAG AACAAACCAAG TCCACAATCG ACTCCGGAAC	1200
	CTAGTCCAAG TCTGCAACCT GCACCAAATC CTCACCAGC TCCAAGCAAT CCAATTGATG	1260
35	AGAAATTGGT CAAAGAAGCT GTTCGAAAAG TAGGCGATGG TTATGTCTTT GAGGAGAATG	1320
	GAGTTTCTCG TTATATCCCA GCCAAGGATC TTTACAGAGA AACAGCAGCA GGCATTGATA	1380
	GCAAACTGGC CAAGCAGGAA AGTTTATCTC ATAAGCTAGG AGCTAAGAAA ACTGACCTCC	1440
	CATCTAGTGA TCGAGAATTT TACAATAAGG CTTATGACTT ACTAGCAAGA ATTCACCAAG	1500
	ATTTACTTGA TAATAAAGGT CGACAAGTTG ATTTTGGAGT TTTGGATAAC CTGTTGGAAC	1560
40	GACTCAAGGA TGTCTCAAGT GATAAAGTCA AGTTAGTGGA TGATATTCTT GCCTTCTTAG	1620
	CTCCGATTCTG TCATCCAGAA CGTTTAGGAA AACCAAATGC GCAAATTACC TACACTGATG	1680
	ATGAGATTCA AGTAGCCAAG TTGGCAGGCA AGTACACAAC AGAAGACGGT TATATCTTTG	1740
	ATCCTCGTGA TATAACCAGT GATGAGGGGG ATGCCTATGT AACTCCACAT ATGACCCATA	1800
	GCCACTGGAT TAAAAAAGAT AGTTTGTCTG AAGCTGAGAG AGCGGCAGCC CAGGCTTATG	1860
45	CTAAAGAGAA AGGTTTGACC CCTCCTTCGA CAGACCACCA GGATTCAGGA AATACTGAGG	1920

	CAAAAGGAGC AGAAGCTATC TACAACCGCG TGAAAGCAGC TAACAAGGTG CCACTTGATC	1980
	GTATGCCTTA CAATCTTCAA TATACTGTAG AAGTCAAAA CCGTAGTTTA ATCATACCTC	2040
	ATTATGACCA TTACCATAAC ATCAAATTTG AGTGGTTTGA CGAAGGCCTT TATGAGGCAC	2100
	CTAAGGGGTA TAGTCTTGAG GATCTTTTGG CCACTGTCAA GTACTATGTC GAACATCCAA	2160
5	ACGAACGTC GCATTCAGAT AATGGTTTTG GTAACGCTAG TGACCATGTT CGTAAAAATA	2220
	AGGCAGACCA AGATAGTAAA CCTGATGAAG ATAAGGAACA TGATGAAGTA AGTGAGCCAA	2280
	CTCACCTGA ATCTGATGAA AAAGAGAATC ACGCTGGTTT AAATCCTTCA GCAGATAATC	2340
	TTTATAAACC AAGCACTGAT ACGGAAGAGA CAGAGGAAGA AGCTGAAGAT ACCACAGATG	2400
	AGGCTGAAAT TCCTCAAGTA GAGAATTCTG TTATTAACGC TAAGATAGCA GATGCGGAGG	2460
10	CCTTGCTAGA AAAAGTAACA GATCCTAGTA TTAGACAAA TGCTATGGAG ACATTGACTG	2520
	GTCTAAAAAG TAGTCTTCTT CTCGGAACGA AAGATAATAA CACTATTTCA GCAGAAGTAG	2580
	ATAGTCTCTT GGCTTTGTTA AAAGAAAGTC AACCGGCTCC TATACAGTAG TAAATGAA	2639

(SEQ ID NO : 5)

FIGURE 5

15

	MKFSKKYIAA GSAVIVSLSL CAYALNQHRS QENKDNRRVS YVDGSQSSQK	50
	SENLTPDQVS QKEGIQAEQI VIKITDQGYV TSHGDHYHYH NGKVPYDALF	100
	SEELLMKDPN YQLKDADIVN EVKGGYIIKV DGKYYVYLKD AAHADNVRTK	150
20	DEINRQKQEH VKDNEKVNSN VAVARSQGRY TTNDGYVFPN ADIIEDTGNA	200
	YIVPHGGHYH YIPKSDLAS ELAAAKAHLA GKNMQPSQLS YSSTASDNNT	250
	QSVAKGSTSK PANKSENLOS LLKELYDSPS AQRYSSEDGL VFDPAKIISR	300
	TPNGVAIPHG DHYHFIPYSK LSALEEKIAR MVPISGTGST VSTNAKPNEV	350
	VSSLGSLSSN PSSLTTSKEL SSASDGYIFN PKDIVEETAT AYIVRHGDHF	400
25	HYIPKSNQIG QPTLPNNSLA TPSPSLPINP GTSHEKHEED GYGFDANRII	450
	AEDESGFVMS HGDHNNHYFFK KDLTEEQIKA AQKHLEEVKT SHNGLDSLSS	500
	HEQDYPGNAK EMKDLDDKKIE EKIAGIMKQY GVKRESIVVN KEKNAIIPPH	550
	GDHHHADPID EHKPVGIGHS HSNYELFKPE EGVAKKEGNK VYTGEELTNV	600
	VNLLKNSTFN NQNFTELANGQ KRVSFSPFPE LEKKLGINML VKLITPDGKV	650
30	LEKVSQKVFQ EGVGNIANFE LDQPYLPGQT FKYTIASKDY PEVSYDGTFT	700
	VPTSLAYKMA SQTIFYPFHA GDTYLRVNPQ FAVPKGTDAL VRFDEFHGN	750
	AYLENNYKVG EIKLPIPKLN QGTTTRTAGNK IPVTTFMANAY LDNQSTYIVE	800
	VPILEKENQT DKPSILPQFK RNKAQENSKL DEKVEEPKTS EKVEKEKLSE	850
	TGNSTSNSTL EEVPTVDPVQ EKVAKFAESY GMKLENVLFN MDGTIELYLP	900
35	SGEVIKKNMA DFTGEAPQGN GENKPSENGK VSTGTVENQP TENKPADSLP	950
	EAPNEKPVKP ENSTDNGMLN PEGNVGSDPM LDPALAEAPA VDPVQEKLEK	1000
	FTASYGLGLD SVIFNMDGTI ELRLPSGEVI KKNLSDFIA (SEQ ID NO: 6)	1039

FIGURE 6

40

	MKINKKYLAL SVATLVLSVC AYELGLHQAQ TVKENNRVSY IDGKQATQKT	50
	ENLTPDEVSK REGINAEQIV IKITDQGYVT SHGDHYHYHN GKVPYDAIIS	100
	EELLMKDPNY QLKDSDIVNE IKGGYVIKVN GKYYVYLKDA AHADNVRTKE	150
	EINRQKQEH QHREGGTSAN DGAVAFARSQ GRYTTDDGYI FNASDIIEDT	200
45	GDAYIVPHGD HYHYIPKNEL SASLAAAAEA FLGRENLSN LRTYRRQNSD	250

	NTPRTNWVPS VSNPGTTNTN TSMNSNTNSQ ASQSNIDISL LKQLYKLPLS	300
	QRHVESDGLI FDPAQITSRT ARGVAVPHGN HYHFIPYEQM SELEKRIARI	350
	IPLRYRSNHW VPDSRPEEPS PQPTPEPSPS PQPAPNPQPA PSNPIDEKLV	400
	KEAVRKVG DG YVFEENGVS R YIPAKNLSAE TAAGIDSKLA KQESLSHKL G	450
5	AKKTDL P SSD REFYNKAYDL LARIHQDLLD NKGRQVDFEA LDNLLERLKD	500
	VSSDKVKLVD DILAFLAPIR HPERLGK PNA QITYTDDEIQ VAKLAGKYTT	550
	EDGYIFDPRD ITSDEGDAYV TPHMTHSHWI KKDSLSEAER AAAQAYAKEK	600
	GLTPPSTDHQ DSGNTEAKGA EAIYNRVKAA KKVPLDRMPY NLQYTV EVKN	650
	GSLIIPHYDH YHNIKFEWFD EGLYEAPKGY TLEDLLATVK YYVEHPNERP	700
10	HSDNGFGNAS DHVQRNKNQG ADTNQTEKPS EEKPQTEKPE EETPREEK PQ	750
	SEKPESPKPT EEPEEESPEE SEEPQVETEK VEEKLREAED LLGKIQDP II	800
	KSNAKETLTG LKNNLLFGTQ DNNTIMAEAE KLLALLKESK (SEQ ID NO: 7)	840

FIGURE 7

15	MKINKKYL AG SVAVLALSVC SYELGRHQAG QVKKESNRVS YIDGDQAGQK	50
	AENLTPDEVS KREGINAEQI VIKITDQGYV TSHGDHYHY NGKVPYDAII	100
	SEELLMKDPN YQLKDS DIV EIKGGYVIKV DGKYYVYLKD AAHADNIRTK	150
	EEKRQKQEH SHNHNSRADN AVAAARAQGR YTTDDGYIFN ASDI EDTGD	200
20	AYIVPHGDHY HYIPKNELSA SELAAAEAYW NGKQGSRPSS SSSYNANPVQ	250
	PRLSENHNL T VTPTYHQNG ENISSLLREL YAKPLSERHV ESDGLIFDPA	300
	QITSRTARGV AVPHGNHYHF IPYEQMSELE KRIARIPLR YRSNHWVPDS	350
	RPEQSPQST PEPSPSLQPA PNPQPAPSNP IDEKLVKEAV RKGVDGYVFE	400
	ENGVSRYIPA KDL SAETAAG IDSKLAKQES LSHKLGAKKT DLPSSDREFY	450
25	NKAYDLLARI HQDLLDNKGR QVDFEVL DNL LERLKD VSSD KVKLVDDILA	500
	FLAPIRHPER LGK PNAQITY TDDEIQVAKL AGKYTTEDGY IFDPRDITS D	550
	EGDAYVTPHM THSHWIKKDS LSEAERAAAQ AYAKEKGLTP PSTDHQDSGN	600
	TEAKGA EAIY NRVKAAKKVP LDRMPYNLQY TVEVKNGSLI IPHYDHYHNI	650
	KFEWFDEGLY EAPKGYSLD LLATVKYYVE HPNERPHSDN GFGNASDHVR	700
30	KNKADQDSKP DEDKEHDEVS EPTHPESDEK ENHAGLNPSA DNLYKPSTDT	750
	EETEEEAEDT TDEAEIPQVE NSVINAKIAD AEALLEK VTD PSIRQNAMET	800
	LTGLKSSLLL GTKDNNTISA EVDSLLALLK ESQPAPIQ	838

(SEQ ID NO : 8)

FIGURE 8

35	TGTGCCTATG CACTAAACCA GCATCGTTCG CAGGAAAATA AGGACAATAA TCGTGTCTCT	60
	TATGTGGATG GCAGCCAGTC AAGTCAGAAA AGTGAAA ACT TGACACCAGA CCAGGTTAGC	120
	CAGAAAGAAG GAATTCAGGC TGAGCAAATT GTAATCAAAA TTACAGATCA GGGCTATGTA	180
40	ACGTACACAG GTGATCACTA TCATTACTAT AATGGGAAAG TTCCTTATGA TGCCCTCTTT	240
	AGTGAAGAAC TCTTGATGAA GGATCCAAAC TATCAACTTA AAGACGCTGA TATTGTCAAT	300
	GAAGTCAAGG GTGGTTATAT CATCAAGGTC GATGGAAAAT ATTATGTCTA CCTGAAAGAT	360
	GCAGCTCATG CTGATAATGT TCGAACTAAA GATGAAATCA ATCGTCAAAA ACAAGAACAT	420
	GTCAAAGATA ATGAGAAGGT TAACTCTAAT GTTGCTGTAG CAAGGTCTCA GGGACGATAT	480
45	ACGACAAATG ATGGTTATGT CTTTAATCCA GCTGATATTA TCGAAGATAC GGCTAATGCT	540

	TATATCGTTC CTCATGGAGG TCACTATCAC TACATTCCCA AAAGCGATTT ATCTGCTAGT	600
	GAATTAGCAG CAGCTAAAGC ACATCTGGCT GGAATAAATA TGCAACCGAG TCAGTTAAGC	660
	TATTCTTCAA CACCTTCTCC ATCTCTTCCA ATCAATCCAG GAACTTCACA TGAGAAACAT	720
	GAAGAAGATG GATACGGATT TGATGCTAAT CGTATTATCG CTGAAGATGA ATCAGGTTTT	780
5	GTCATGAGTC ACGGAGACCA CAATCATTAT TTCTTCAAGA AGGACTTGAC AGAAGAGCAA	840
	ATTAAGGCTG CGCAAAAACA TTTAGAGGAA GTTAAACTA GTCATAATGG ATTAGATTCT	900
	TTGTCATCTC ATGAACAGGA TTATCCAAGT AATGCCAAAG AAATGAAAGA TTTAGATAAA	960
	AAAATCGAAG AAAAATTGTC TGGCATTATG AAACAATATG GTGTCAAACG TGAAAGTATT	1020
	GTCGTGAATA AAGAAAAAAA TGCGATTATT TATCCGCATG GAGATCACCA TCATGCAGAT	1080
10	CCGATTGATG AACATAAACC GGTGGAATT GGTCAATCTC ACAGTAACTA TGAAGTGT	1140
	AAACCCGAAG AAGGAGTTGC TAAAAAGAA GGAATAAAG TTTATACTGG AGAAGAATTA	1200
	ACGAATGTTG TTAATTTGTT AAAAATAGT ACGTTAATA ATCAAACTT TACTCTAGCC	1260
	AATGGTCAAA AACGCGTTTC TTTAGTTTT CCGCTGAAT TGGAGAAAA ATTAGGTATC	1320
	AATATGCTAG TAAATTAAT AACACCAGAT GAAAAGTAT TGGAGAAAGT ATCTGGTAAA	1380
15	GTATTTGGAG AAGGAGTAGG GAATATTGCA AACTTTGAAT TAGATCAACC TTATTTACCA	1440
	GGACAAACAT TTAAGTATAC TATCGCTTCA AAAGATTATC CAGAAGTAAG TTATGATGGT	1500
	ACATTTACAG TTCCAACCTC TTTAGCTTAC AAAATGGCCA GTCAAACGAT TTCTATCTCT	1560
	TTCCATGCAG GGGATACTTA TTTAAGAGTG AACCCTCAAT TTGCAGTGCC TAAAGGAAGT	1620
	GATGCTTTAG TCAGAGTGTT TGATGAATTT CATGGAAATG CTTATTTAGA AAATAACTAT	1680
20	AAAGTTGGTG AAATCAAATT ACCGATTCCG AAATTAAACC AAGGAACAAC CAGAACGGCC	1740
	GGAAATAAAA TTCCTGTAAC CTTTCATGGCA AATGCTTATT TGGACAATCA ATCGACTTAT	1800
	ATTGTGGAAG TACCTATCTT GGAAAAAGAA AATCAAACCTG ATAAACCAAG TATTCTACCA	1860
	CAATTTAAAA GGAATAAAGC ACAAGAAAAC TCAAACTTG ATGAAAAGGT AGAAGAACCA	1920
	AAGACTAGTG AGAAGGTAGA AAAAGAAAAA CTTTCTGAAA CTGGGAATAG TACTAGTAAT	1980
25	TCAACGTTAG AAGAAGTTCC TACAGTGGAT CCTGTACAAG AAAAGTAGC AAAATTTGCT	2040
	GAAAGTTATG GGATGAAGCT AGAAAATGTC TTGTTTAATA TGGACGGAAC AATTGAATTA	2100
	TATTTACCAT CGGGAGAAGT CATTAAAAAG AATATGGCAG ATTTTACAGG AGAAGCACCT	2160
	CAAGGAAATG GTGAAAATAA ACCATCTGAA AATGGAAAAG TATCTACTGG AACAGTTGAG	2220
	AACCAACCAA CAGAAAATAA ACCAGCAGAT TCTTTACCAG AGGCACCAA CGAAAAACCT	2280
30	GTAAAACCAG AAAACTCAAC GGATAATGGA ATGTTGAATC CAGAAGGGAA TGTGGGGAGT	2340
	GACCCTATGT TAGATTCAGC ATTAGAGGAA GCTCCAGCAG TAGATCCTGT ACAAGAAAAA	2400
	TTAGAAAAAT TTACAGCTAG TTACGGATTA GGCTTAGATA GTGTTATATT CAATATGGAT	2460
	GGAACGATTG AATTAAGATT GCCAAGTGGA GAAGTGATAA AAAAGAATTT ATTGATCTCA	2520
	TAGCGTAA (SEQ ID NO : 9)	2528
35	FIGURE 9	

	CAYALNQHRs QENKDNrVS YVDGSQSSQK SENLTPDQVS QKEGIQAEQI	50
	VIKITDQGYV TSHGDHYHY NGKVPYDALF SEELLMKDPN YQLKDADIVN	100
40	EVKGGYIIKV DGKYYVYLKD AAHADNVRTK DEINRQKQEH VKDNEKVNSN	150
	VAVARSQGRY TTNDGYVFPN ADIIEDTGNA YIVPHGGHYH YIPKSDLSAS	200
	ELAAAKAHLA GKNMQPSQLS YSSTPSPSLP INPGTSHEKH EEDGYGFDAN	250
	RIIAEDES GF VMShGDHNHY FFKKDLTEEQ IKAAQKHLEE VKTSHNGLDS	300
	LSSHEQDYPS NAKEMKDL DK KIEEKIAGIM KQYGVKRESI VVNKEKNAI	350
45	YPHGDHHHAD PIDEHKPVG I GHSHSNYELF KPEEGVAKKE GNKVYTGEEL	400

TNVVNLLKNS	TFNNQNFTLA	NGQKRVSFSF	PPELEKKLGI	NMLVKLITPD	450
GKVLEKVS	GFEGVGNIA	NFELDQPYLP	GQTFKYTIAS	KDYPEVSYDG	500
TFTVPTSLAY	KMASQTIFYP	FHAGDTYLRV	NPQFAVPKGT	DALVRVFDEF	550
HGNAYLENNY	KVGEIKLPI	KLNQGTTRTA	GNKIPVTFMA	NAYLDNQSTY	600
5 IVEVPILEKE	NQTDKPSILP	QFKRNKAQEN	SKLDEKVEEP	KTSEKVEKEK	650
LSETGNSTSN	STLEEVPTVD	PVQEKVAKFA	ESYGMKLENV	LFNMDGTIEL	700
YLP	SGEVIKK	NMADFTGEAP	QNGENKPS	NGKVSTGTVE	750
SLPEAPNEKP	VKPNSTDNG	MLNPEGNVGS	DPMLDSALEE	APAVDPVQEK	800
10 LEKFTASYGL	GLDSVIFNMD	GTIELRLPSG	EVIKKNLLIS		840

(SEQ ID NO : 10)

FIGURE 10

15 DQGYVTSHGD HYHYNGKVP YDALFSEELL MKDPNYQLKD ADIVNEVKGG YIIKVDGKYY
VYLKDAAHAD NVRTKDEINR QKQEHVKDNE KVNS

(SEQ ID NO: 11)

FIGURE 11

20 GIQAEQIVIK ITDQGYVTSH GDHYHYNGK VPYDALFSEE LL

(SEQ ID NO: 12)

FIGURE 12

25 TAYIVRHGDH FHYIPKSNQI GQPTLPNNSL ATPSPSLPI

(SEQ ID NO: 13)

FIGURE 13

30 TSNSTLEEV TVDPVQEKVA KFAESYGMKL ENVLFN

(SEQ ID NO: 14)

FIGURE 14

35 MDGTIELRLP SGEVIKKNLS DFIA

(SEQ ID NO: 15)

FIGURE 15

40 YGLGLDSVIF NMDGTIELRL PSGEVIKKNL SDFIA

(SEQ ID NO: 16)

FIGURE 16

45 PALEEAPAVD PVQEKLEKFT ASYGLGLDSV IFNMDGTIEL RLPSGEVIKK NLSDFIA

(SEQ ID NO: 17)

FIGURE 17

KVEEPKTSEK VEKEKLSETG NSTSNSTLEE VPTVDFVQEK

(SEQ ID NO: 18)

FIGURE 18

5

MKDLDKKIEE KIAGIMKQYG VKRESIVVNK EKNAIIYPHG DHHHADPIDE HKPVGIGHSH
SNYELFKPEE GVAKKEGN

(SEQ ID NO: 19)

FIGURE 19

10

AIYPHGDHH HADPIDEHKP VGIGHSHSNY ELFKPEEGVA KKEGNKVYTG E

(SEQ ID NO: 20)

FIGURE 20

15

IQVAKLAGKY TTEDGYIFDP RDITSDEGD

(SEQ ID NO: 21)

FIGURE 21

20

DHQDSGNTAE KGAETIYNRV KAAKQVPLDR MPYNLQYTVKNGSLIIPH YDHYHNIKFE
WFDEGLYEAP KGYSLEDLLA TVKYYV

(SEQ ID NO: 22)

FIGURE 22

25

GLYEAPKGYS LEDLLATVKY YVEHPNERPH SDNGFGNASD H

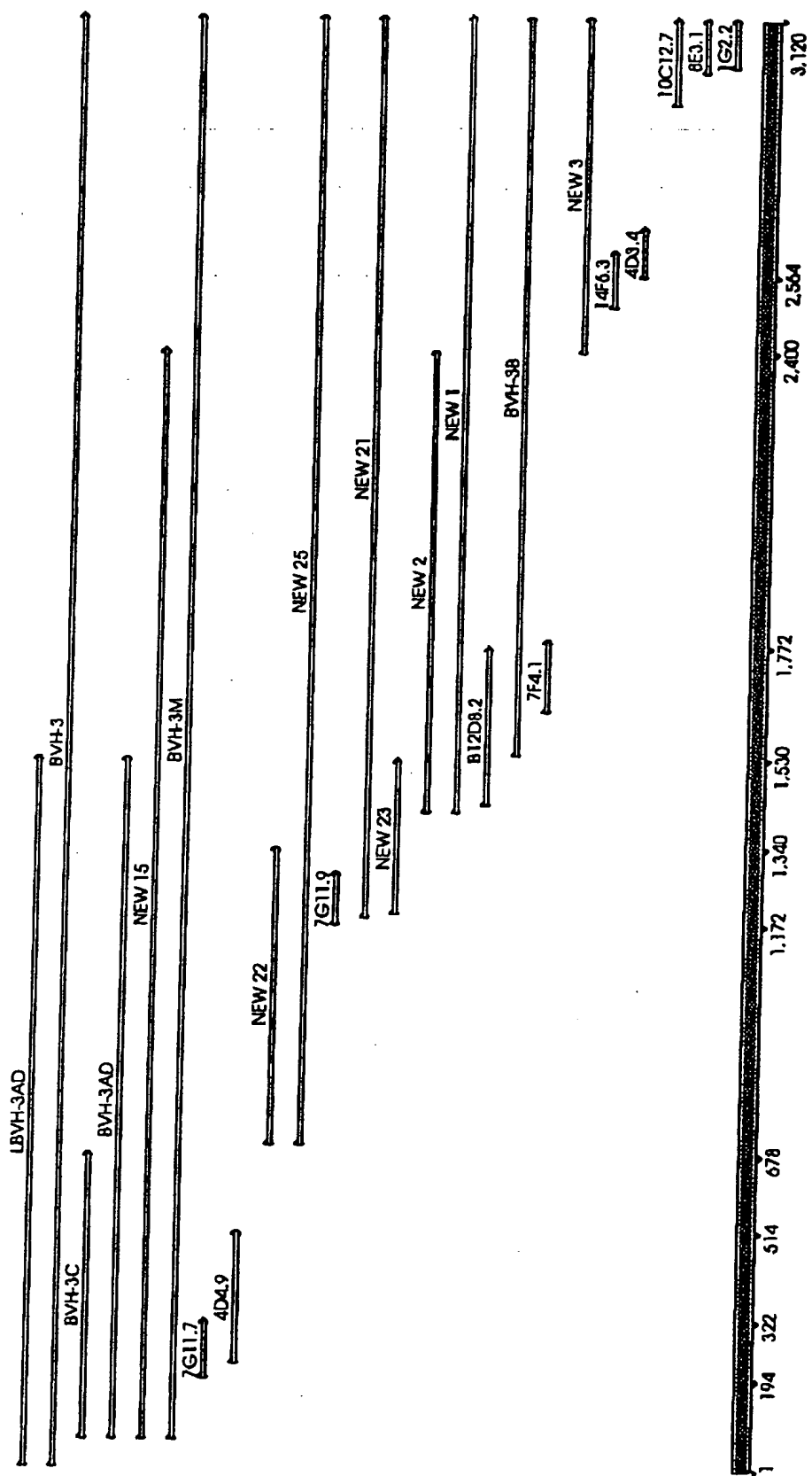
(SEQ ID NO: 23)

FIGURE 23

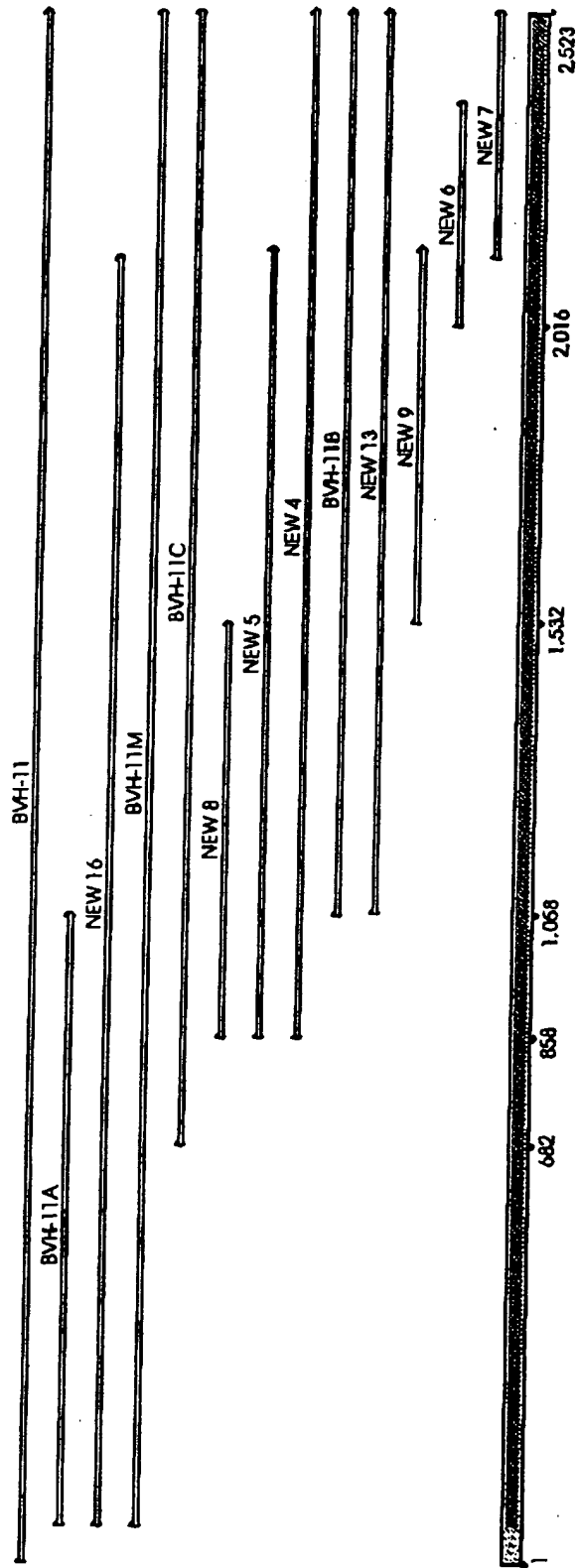
GLYEAPKGYSLEDLLATVKYYV

(SEQ ID NO: 163)

Figure 24



5 FIGURE 25



5 FIGURE 26

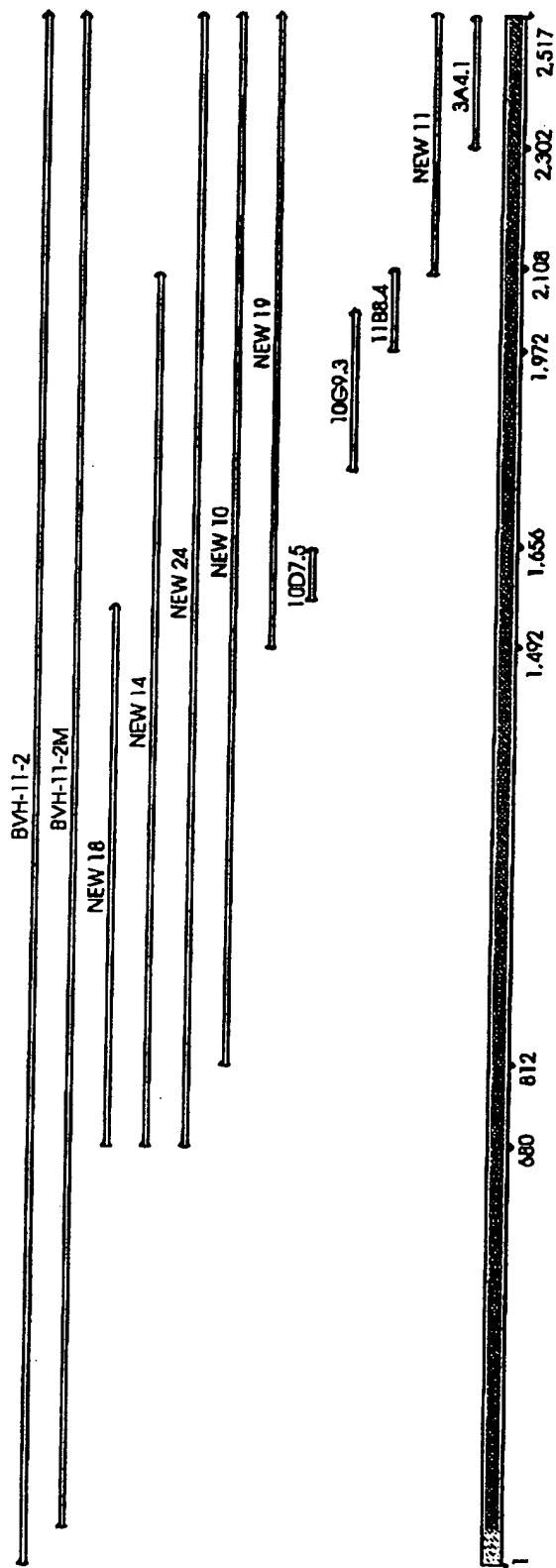


FIGURE 27

Epitope Localization on BVH-3 Protein

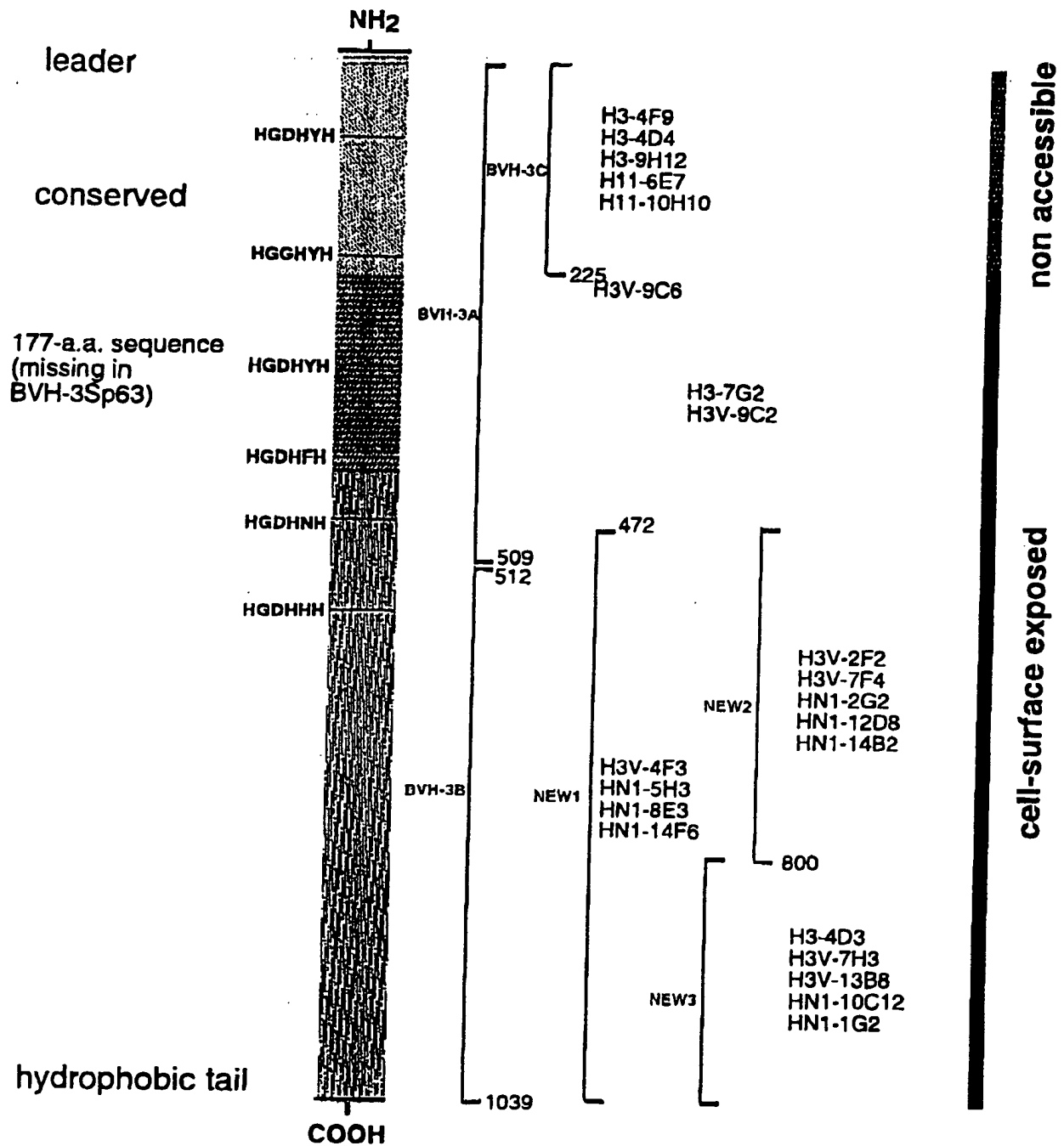
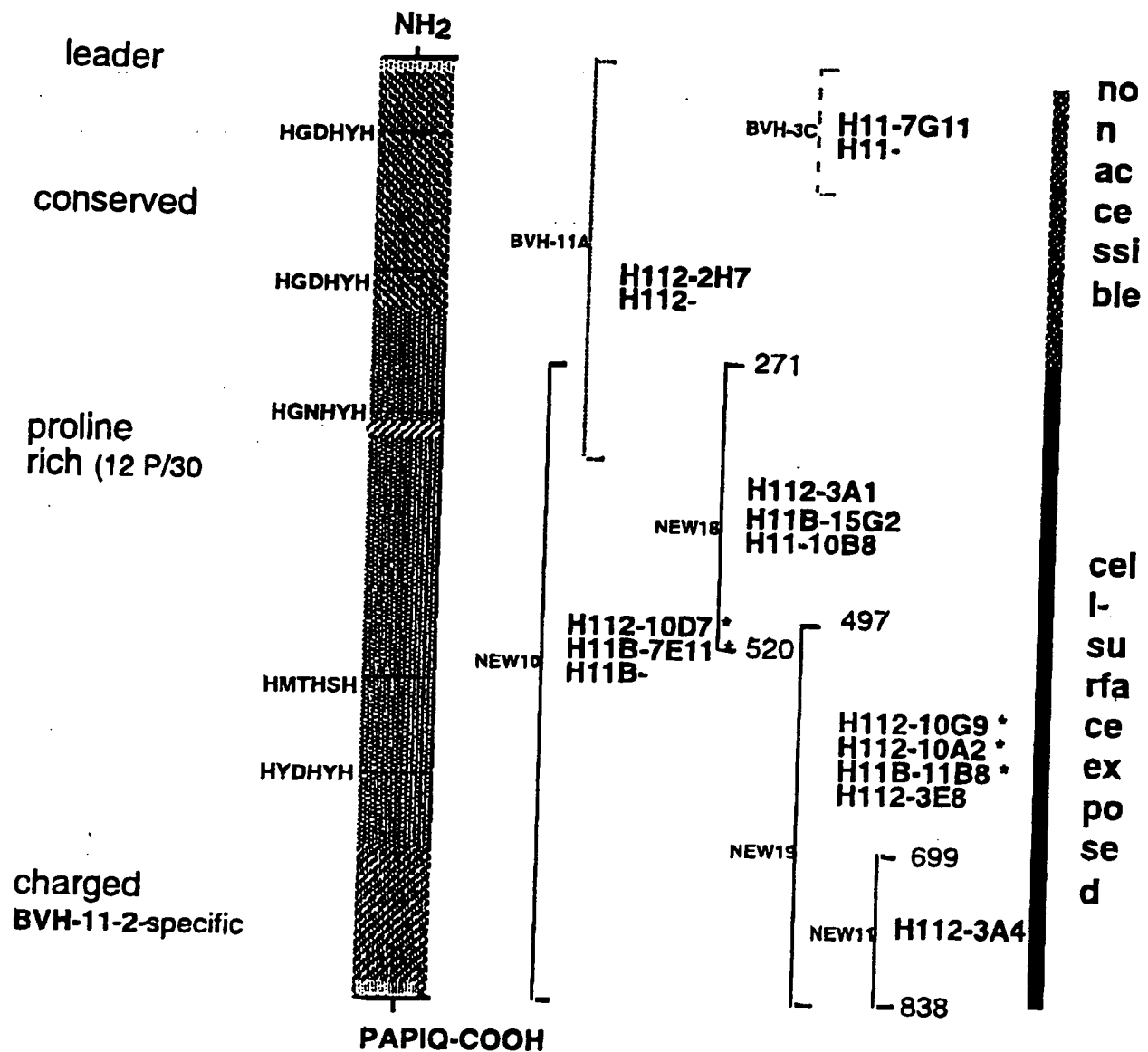


FIGURE 28

Epitope Localization on BVH-11-2 Prot in



* Surface-exposed and protection-conferring Mabs

FIGURE 29

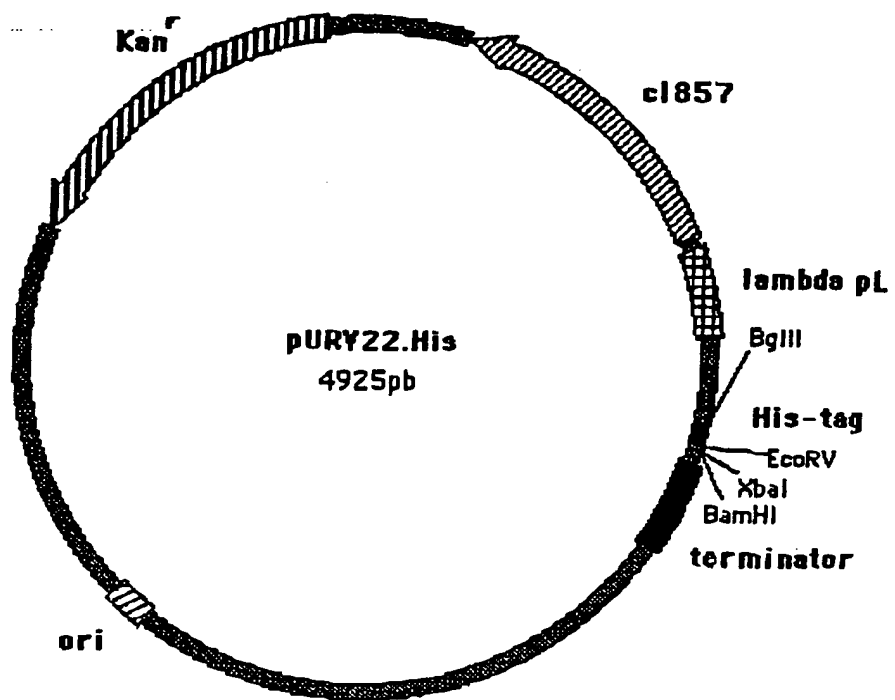


FIGURE 30

	BVH-3M	1	CAYALNQHRSEQENKDNRRVSYVDGSQSSQKSENLTDPQVSQKEGIQAEQIVIKITDQGYV	60
5	BVH3-63	1	CAYALNQHRSEQENKDNRRVSYVDGSQSSQKSENLTDPQVSQKEGIQAEQIVIKITDQGYV	60

	BVH-3M	61	TSHGDHYHYNGKVPYDALFSEELLMKDPNYQLKDADIVNEVKGGYIIKVDGKYYVYLKD	120
10	BVH3-63	61	TSHGDHYHYNGKVPYDALFSEELLMKDPNYQLKDADIVNEVKGGYIIKVDGKYYVYLKD	120

	BVH-3M	121	AAHADNVRTKDEINRQKQEHVKDNEKVNSNVAVARSQGRYTTNDGYVFNPAIIEDTGNA	180
	BVH3-63	121	AAHADNVRTKDEINRQKQEHVKDNEKVNSNVAVARSQGRYTTNDGYVFNPAIIEDTGNA	180

15				
	BVH-3M	181	YIVPHGGHYHYIPKSDLSASELAAAKAHLAGKNMQPSQLSYSS TASDNNTQSVAKGSTSK	240
	BVH3-63	181	YIVPHGGHYHYIPKSDLSASELAAAKAHLAGKNMQPSQLSYSS-----	223

20				
	BVH-3M	241	PANKSENLSLLKELYDSPSAQRYSES DGLVFP AKIISRTPNGVAIPHGDHYHFIPYSK	300
	BVH3-63	224	-----	223
25				
	BVH-3M	301	LSALEEKIARMVPISGTGSTVSTNAKPNEVVSSLGSLSSNPSSLTTSKELSSASDGYIFN	360
	BVH3-63	224	-----	223
30				
	BVH-3M	361	PKDIVEETATAYIVRHGDHFHYIPKSNQIGQPTLPNNSLATPSPSLPINPGTSHEKHEED	420
	BVH3-63	224	-----TPSPSLPINPGTSHEKHEED	243

	BVH-3M	421	GYGFDANRIIAEDES GFVMSHGDNHYFFKKDLTEEQIKAAQKHLEEVKTSHNGLDSLSS	480
	BVH3-63	244	GYGFDANRIIAEDES GFVMSHGDNHYFFKKDLTEEQIKAAQKHLEEVKTSHNGLDSLSS	303

35				
	BVH-3M	481	HEQDYPGNAKEMKDLDKKIEEKIAGIMKQYGVKRESIVVNKEKNAIIPHGDDHHADPID	540
	BVH3-63	304	HEQDYPSNAKEMKDLDKKIEEKIAGIMKQYGVKRESIVVNKEKNAIIPHGDDHHADPID	363

40				
	BVH-3M	541	EHKPVGIGHSHSNYELFKPEEGVAKKEGNKVYTGEELTNVVNLLKNSTFNNQNFTLANGQ	600
	BVH3-63	364	EHKPVGIGHSHSNYELFKPEEGVAKKEGNKVYTGEELTNVVNLLKNSTFNNQNFTLANGQ	423

45				
	BVH-3M	601	KRVSFSPFPELEKKLGINMLVKLITPDGKVLKVS GKFGEVGNIANFELDQPYLPGQT	660
	BVH3-63	424	KRVSFSPFPELEKKLGINMLVKLITPDGKVLKVS GKFGEVGNIANFELDQPYLPGQT	483

5 BVH-3M 661 FKYTIASKDYPEVSYDGTFTVPTSLAYKMASQTIFYPPFHAGDTYLRVNPQFAVPKGTDAL 720
BVH3-63 484 FKYTIASKDYPEVSYDGTFTVPTSLAYKMASQTIFYPPFHAGDTYLRVNPQFAVPKGTDAL 543

10 BVH-3M 721 VRVFDEFHGNAYLENNYKVGEIKLPIPKLNQGTTRTAGNKIPVTFMANAYLDNQSTYIVE 780
BVH3-63 544 VRVFDEFHGNAYLENNYKVGEIKLPIPKLNQGTTRTAGNKIPVTFMANAYLDNQSTYIVE 603

BVH-3M 781 VPILEKENQTDKPSILPQFKRNKAQENSKLDEKVEEPKTSEKVEKEKLSETGNSTSNSTL 840
BVH3-63 604 VPILEKENQTDKPSILPQFKRNKAQENSKLDEKVEEPKTSEKVEKEKLSETGNSTSNSTL 663

15 BVH-3M 841 EEVPTVDPVQEKVAKFAESYGMKLENVLFNMDGTIELYLPSEVIKKNMADFTGEAPQGN 900
BVH3-63 664 EEVPTVDPVQEKVAKFAESYGMKLENVLFNMDGTIELYLPSEVIKKNMADFTGEAPQGN 723

20 BVH-3M 901 GENKPSSENGKVSTGTVENQPTENKPADSLPEAPNEKPVKPENSTDNGMLNPEGNVGSDPM 960
BVH3-63 724 GENKPSSENGKVSTGTVENQPTENKPADSLPEAPNEKPVKPENSTDNGMLNPEGNVGSDPM 783

25 BVH-3M 961 LDPALEEAPAVDPVQEKLEKFTASYGLGLDSVIFNMDGTIELRLPSGEVIKKNLSDFIA 1019
BVH3-63 784 LDSALEEAPAVDPVQEKLEKFTASYGLGLDSVIFNMDGTIELRLPSGEVIKKNLLIS 840
** *****

FIGURE 31

30
35 BVH-3 1 MKFSKKYIAAGSAVIVSLSLCAYALNQHRSQENK-DNNRVSYVDGSQSSQKSENLTDPQV 59
BVH-11 1 MKINKKYLALAG-SVATLVLSVCAYELGLHQAQTVK-ENNRVSYIDGKQATQKTENLTPDEV 58
BVH-11-2 1 MKINKKYLALAG-SVAVLALSVCSEYELGRHQAGQVKKESNRVSYIDGDQAGQKAENLTPDEV 59
** * * * * . * * . * * . * . * * . * * . * * . * * . * * . * * . * * . * * . * * . * *

40 BVH-3 60 SQKEGIQAEQIVIKITDQGYVTSHGDHYHYNGKVPYDALFSEELLMKDPNYQLKDADIV 119
BVH-11 59 SKREGINAEQIVIKITDQGYVTSHGDHYHYNGKVPYDAIISEELLMKDPNYQLKDS DIV 118
BVH-11-2 60 SKREGINAEQIVIKITDQGYVTSHGDHYHYNGKVPYDAIISEELLMKDPNYQLKDS DIV 119
* . * * * . *

45 BVH-3 120 NEVKGGYIIKVDGKYYVYLKDAAHADNVRTKDEINRQKQEHVKDNE----KVNSNVAVAR 175
BVH-11 119 NEIKGGYVIKVGKYYVYLKDAAHADNVRTKEEINRQKQEHSHREGGTSANDGAVAFAR 178
BVH-11-2 120 NEIKGGYVIKVDGKYYVYLKDAAHADNIRTKEEIKRQKQEHSHNHN---SRADNAVAAR 176
* . * * * . *

BVH-3 176 SQGRYTTNDGYVFNPAIIEDTGNAYIVPHGGHYHYIPKSDLSASELAAAKAHLAGKNMQ 235
 BVH-11 179 SQGRYTTDDGYIFNASDIIEDTGDAYIVPHGDHYHYIPKNELSASELAAAEFLSGRENL 238
 BVH-11-2 177 AQGRYTTDDGYIFNASDIIEDTGDAYIVPHGDHYHYIPKNELSASELAAAEAYWNGKQ-- 234
 5 ***** ** . ***** ***** ***** ***** ***** * *

 BVH-3 236 PSQLSYSSTASDNNTQSVAKGSTSKP-----A-N-----KSENLSLLKELYDSP 279
 BVH-11 239 SNLRTYRRQNSDNTPRTNWVPSVSNPGTNTNTSNNSTNSQASQSNDIDSLLKQLYKLP 298
 BVH-11-2 235 -GSRPSSSSSYNANPVQPRLSENHNLTVTPYHQN-----QGENISSLLRELYAKP 284
 10 * *

 BVH-3 280 SAQRYSESDGLVFDPAKIISRTPNGVAIPHGDHYHFIPYSKLSALEEKIARMVPISGTGS 339
 BVH-11 299 LSQRHVESDGLIFDPAQITSRTARGVAVPHGNHYHFIPYEQMSELEKRIARIIPLYRSN 358
 BVH-11-2 285 LSERHVESDGLIFDPAQITSRTARGVAVPHGNHYHFIPYEQMSELEKRIARIIPLYRSN 344
 15 ..* ***** *

 BVH-3 340 TVSTNAKPNEVVSSLSLSSNPSSLTTSKELSSASDGYIFNPKDIVEETATAYIVRHGDH 399
 BVH-11 359 HWVPDSRP-EEPSPOPTPEPS-PPAPNPQPAPS-----NP--IDEKLVKEAVRKVG DG 410
 BVH-11-2 345 HWVPDSRP-EQPSPOSTPEPS-PPAPNPQPAPS-----NP--IDEKLVKEAVRKVG DG 396
 20 ..* * * * * * *

 BVH-3 400 FHYIPKSNQIGQPTLPNNSLATPSPSLPINPGTSHEKHEEDGYGFDANRIIAEDES GFVM 459
 BVH-11 411 YVFEE-----NGVSRYIP-----AKNLSAETAAGIDSKLAKQESLS---- 446
 BVH-11-2 397 YVFEE-----NGVSRYIP-----AKDLSAETAAGIDSKLAKQESLS---- 432
 25 * * * *

 BVH-3 460 SHGDHNNHYFFKKDLTEEQIKAAQKHL EEVKTS HNGLDLSLSSHEQDYPGNAKEMKDLDK KI 519
 BVH-11 447 ----HKLGA KTDLPSSDREFYNKAYDLLARIHQD LLDNKG RQVDFEALDNLLERLKDVS 502
 BVH-11-2 433 ----HKLGA KTDLPSSDREFYNKAYDLLARIHQD LLDNKG RQVDFEVLNLLERLKDVS 488
 30 * * * *

 BVH-3 520 EEKIAGIMKQYGVKRESIVVNKEKNAIIPHGDDHHADPIDEHKPVGIGHSHSNYELFKP 579
 BVH-11 503 SDKVKLVDDILAFLAP--IRHPER--LGKPN AQITYTDDEIQVAKLAGKYTTEDGYIFDP 558
 BVH-11-2 489 SDKVKLVDDILAFLAP--IRHPER--LGKPN AQITYTDDEIQVAKLAGKYTTEDGYIFDP 544
 35 . * *

 BVH-3 580 EEGVAKKEGNKVYTGEELTNVVNLLKNSTFNNQNFTLANGQKRVSPFPPELEKKLGIMM 639
 BVH-11 559 RD-ITSDEGD-AYVTPHMTSHWIKKDS-LSEAERAAAQAYAKEKGLTPPSTDH QD---- 611
 BVH-11-2 545 RD-ITSDEGD-AYVTPHMTSHWIKKDS-LSEAERAAAQAYAKEKGLTPPSTDH QD---- 597
 40 * * * *

 BVH-3 640 LVKLITPDGKVLEKVS GKVFGEGVGNIANFELDQPYLPGQTFKYTIASKDYPEVSYDGT F 699
 BVH-11 612 -----SGNTEAKGAEAIYNRVKA AKKVPLDRMPYNLQ---YTVEVKNGSL 653
 BVH-11-2 598 -----SGNTEAKGAEAIYNRVKA AKKVPLDRMPYNLQ---YTVEVKNGSL 639
 45 * * * * *

BVH-3 700 TVPTSLAYKMASQTIFYPFHAGDTYLVRNPQFAVPKGTDALVRVDFEFGHGNAYLENNYKV 759
 BVH-11 654 IIP---HYDHYHNIKFEWFDEG-----LYEAPKG-----YTLEDLLAT 688
 BVH-11-2 640 IIP---HYDHYHNIKFEWFDEG-----LYEAPKG-----YSLEDLLAT 674
 5 * * * * *

10 BVH-3 760 GEIKLPIPKLNQGTTRTAGNKIPVTFMANAYLDNQSTYIVEVPILEKENQTDKPSILPQF 819
 BVH-11 689 VKYYVEHPNERPHSDNGFGN-----ASDHVQRN-----KNGQADTN----- 724
 BVH-11-2 675 VKYYVEHPNERPHSDNGFGN-----ASDHVRKN-----KADQDSKP----- 710
 * * * * *

15 BVH-3 820 KRKKAQENSKLDEKVEEPTSEKVEKEKLSETGNSTSNSTLEEVPVDFVQEKVAKFAES 879
 BVH-11 725 -----QTEKPSEEKQTEKPE---EE----- 742
 BVH-11-2 711 -----DEDKEHDEVSEPTHPESDEKE----- 731
 * * * *

20 BVH-3 880 YGMKLENVLFNMDGTIELYLPSEGEVIKKNMADFTGEAPOGNGENKPSSENGKVSTGTVENQ 939
 BVH-11 743 -----TPREEKPQSE---KPES-----PK 758
 BVH-11-2 732 -----NHAGLNPSADNLYKPSTD-----TE 751
 * *

25 BVH-3 940 PTENKPADSLPEAPNEKPVKPENSTDNGMLNPEGNVGSDPMLDPALZEAPAVDFVQEKLE 999
 BVH-11 759 PTEEPPEESPEES---EEPQVETEKVEEKLREAEDLLGK---IQDPIIKSN-----AKETLT 809
 BVH-11-2 752 ETEEEAEDTTDEA---EIQVENSVINAKIADAEALLEK---VTDPSIRQN-----AMETLT 802
 ** * * *

30 BVH-3 1000 KFTASYGLGLDSVIFNMDGTIELRLPSGEVIKKNLSDFIA 1039
 BVH-11 810 GLKNNLLFGTQ-----DNNTIMAEAEKLLALLKESK 840
 BVH-11-2 803 GLKSSLLLGTK-----DNNTISAEVDSLALLKESQPAPIQ 838
 * ** *

35 FIGURE 32

1 ATGCAAATTA CCTACACTGA TGATGAGATT CAGGTAGCCA AGTTGGCAGG CAAGTACACA
 5 61 ACAGAAGACG GTTATATCTT TGATACTAGT TGGATTAAAA AAGATAGTTT GTCTGAAGCT
 121 GAGAGAGCGG CAGCCCAGGC TTATGCTAAA GAGAAAGGTT TGACCCCTCC TTCGACAGAC
 181 CACCAGGATT CAGGAAATAC TGAGGCAAAA GGAGCAGAAG CTATCTACAA CCGCGTGAAA
 241 GCAGCTAAGA AGGTGCCACT TGATCGTATG CCTTACAATC TTCAGTATAC TGTAGAAGTC
 301 AAAAACGGTA GTTTAATCAT ACCTCATTAT GACCATTACC ATAACATCAA ATTTGAGTGG
 10 361 TTTGACGAAG GCCTTTATGA GGCACCTAAG GGCTATAGTC TTGAGGATCT TTTGGCGACT
 421 GTCAAGTACT ATGTCGAACC GCGGAACGCT AGTGACCATG TTCGTAAAAA TAAGGCAGAC
 481 CAAGATAGTA AACCTGATGA AGATAAGGAA CATGATGAAG TAAGTGAGCC AACTCACCCCT
 541 GAATCTGATG AAAAAGAGAA TCACGCTCGT TTAAATCCTT CAGCAGATAA TCTTTATAAA
 601 CCAAGCACTG ATACGGAAGA GACAGAGGAA GAAGCTGAAG ATACCACAGA TGAGGCTGAA
 15 661 ATTCTTGTA CCCCTAGTAT TAGACAAAAT GCTATGGAGA CATTGACTGG TCTAAAAAGT
 721 AGTCTTCTTC TCGGAACGAA AGATAATAAC ACTATTTCAG CAGAAGTAGA TACTCTCTTG
 781 GCTTTGTAA AAGAAAGTCA ACCGGCTCCT ATACAGTAG (SEQ ID NO: 257)

FIGURE 33

1 MQITYTDDEI QVAKLAGKYT TEDGYIFDTS WIKKDSLSEA ERAAAQAYAK EKGLTFPSTD
 25 61 HQDSGNTEAK GAEAIYNRVK AAKKVPLDRM PYNLQYTV EV KNGSLIIPHY DHYHNIKFEW
 121 FDEGLYEAPK GYSLEDLLAT VKYYVEPRNA SDHVRKNKAD QDSKPDEDKE HDEVSEPTHP
 181 ESDEKENHAG LNPSADNLYK PSTDTEETEE EAEDTTDEAE IPGTPSIRON AMETLTGLKS
 241 SLLLGTKDNN TISAEVDSLL ALLKESQPAP IQ (SEQ ID NO : 258)

FIGURE 34